Washington State Institute for Public Policy

Adult Mental Health Benefit-Cost Results

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our technical manual.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

Cognitive Behavioral Therapy (CBT) for anxiety

Literature review updated May 2014.

Program Description: Cognitive-behavioral therapies include various components, such as cognitive restructuring, behavioral activation, emotion regulation, exposure, communication skills, and problem-solving. Most commonly, studies offering this treatment provided 10-20 therapeutic hours per client in individual or group modality. Most studies in this analysis focused on a single anxiety disorder (generalized anxiety, obsessive-compulsive, panic, social phobia) with aspects of the treatment tailored to the specific disorder. This review excludes studies of CBT for post-traumatic stress disorder.

Meta-Analysis of Program Effects										
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Anxiety disorder	Primary	20	-0.836	0.095	0.000	-0.527	0.095	31	-0.274	0.116	33

Cognitive Behavioral Therapy (CBT) for PTSD

Literature review updated May 2014.

Program Description: Treatments include several components, such psycho-education about PTSD, relaxation and other techniques for managing physiological and emotional stress, exposure (the gradual desensitization to memories of the traumatic event) and, cognitive restructuring of inaccurate or unhelpful thoughts. The studies in this review employed a number of trauma-specific treatment models including Prolonged Exposure Therapy (PE), Narrative Exposure Therapy (NET), and Cognitive Processing Therapy (CPT). In the studies in this review, treatments provided between one and 50 therapeutic hours per client in individual or group settings. Studies were conducted on all continents and subjects had experienced a variety of types trauma including terrorism, sexual or physical assault, domestic violence, war, political detention, and automobile accidents.

Meta-Analysis of Program Effects										
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Employment	Primary	1	0.821	0.535	0.125	0.337	0.535	39	0.337	0.535	40
Post-traumatic stress	Primary	57	-0.907	0.050	0.000	-0.438	0.050	39	-0.438	0.050	40

Collaborative primary care for anxiety

Literature review updated May 2014.

Program Description: A care manager provides management and follow-up for patients with anxiety; collaborates primary care provider and usually mental health specialists. The manager focuses both on improving anxiety symptoms.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Anxiety disorder	Primary	4	-0.459	0.123	0.000	-0.393	0.123	44	-0.192	0.134	46

Cognitive Behavioral Therapy (CBT) for depression

Literature review updated May 2014.

Program Description: Cognitive-behavioral therapies include various components, such as cognitive restructuring, behavioral activation, emotion regulation, communication skills, and problem-solving. Treatment is goal-oriented and generally of limited duration. Most commonly, studies offering this treatment provided 10-20 therapeutic hours per client in individual or group modality.

Meta-Analysis of Program Effects										
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	43	-0.675	0.056	0.000	-0.442	0.056	37	-0.230	0.069	39

Collaborative primary care for depression

Literature review updated May 2014.

Program Description: A care manager provides management, follow-up, and collaborates with primary care provider and (usually) mental health specialists. The manager focuses on improving depression symptoms.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	48	-0.270	0.024	0.000	-0.279	0.024	52	-0.137	0.026	54

Collaborative primary care for depression with comorbid medical conditions
Literature review updated May 2014.

Program Description: A care manager provides management and follow-up for depressed patients with any comorbidity and collaborates w/GP and (usually) mental health specialists. Manager focuses both on improving depression and chronic illness symptoms.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	11	-0.395	0.077	0.000	-0.384	0.077	62	-0.188	0.084	64
Blood pressure	Primary	4	-0.459	0.182	0.000	-0.355	0.182	62	-0.174	0.198	64
Blood sugar	Primary	3	-0.254	0.134	0.059	-0.213	0.134	62	-0.104	0.146	64

PTSD prevention following trauma

Literature review updated May 2014.

Program Description: The studies in this review provide CBT treatment to persons in the first weeks and months following trauma, before a diagnosis of PTSD could be made. Treatments in the studies in this review involved five to ten hours of individual therapy that combined education on effects of trauma, relaxation, and exposure.

Meta-Analysis of Program Effects										
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Post-traumatic stress	Primary	11	-0.655	0.106	0.000	-0.331	0.106	36	-0.331	0.106	37

Primary care in behavioral health settings (integrated care settings)

Literature review updated May 2014.

Program Description: Behavioral health settings (mental health and substance abuse treatment centers) provide primary care for patients on site or nearby. This collection of studies was conducted at Veterans Administration facilities or facilities of Kaiser Permanente where patients might have more ready access to primary care than community-based treatment centers.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	3	-0.001	0.124	0.995	-0.001	0.124	41	n/a	n/a	42
Illicit drug abuse or dependence	Primary	2	-0.016	0.081	0.845	-0.016	0.081	41	n/a	n/a	42
Hospitalization (general)	Primary	5	-0.030	0.053	0.557	-0.030	0.053	41	n/a	n/a	42
Hospitalization (psychiatric)	Primary	1	-0.067	4.280	0.987	-0.067	4.280	41	n/a	n/a	42
Emergency department visits	Primary	3	-0.090	0.105	0.388	-0.090	0.105	41	n/a	n/a	42
Blood pressure	Primary	1	-0.075	0.102	0.460	-0.075	0.102	41	n/a	n/a	42
Blood sugar	Primary	1	-0.068	0.102	0.504	-0.068	0.102	41	n/a	n/a	42
Death	Primary	2	-0.077	0.160	0.632	-0.077	0.160	41	n/a	n/a	42
Cholesterol	Primary	1	-0.018	0.102	0.860	-0.018	0.102	41	n/a	n/a	42
Primary care visits	Primary	2	0.531	0.188	0.005	0.531	0.188	41	n/a	n/a	42

Primary care in behavioral health settings

Literature review updated May 2014.

Program Description: These studies evaluated co-location of primary care in behavioral health settings (mental health and substance abuse treatment centers). Of 11 studies, six were conducted in Veterans' Administration health facilities; two were conducted at Kaiser Permanente addiction centers; and three were conducted at other community addiction treatment centers.

			Meta-Analysis of Program Effects								
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	3	-0.001	0.124	0.995	-0.001	0.124	41	n/a	n/a	42
Illicit drug abuse or dependence	Primary	2	-0.017	0.081	0.845	-0.017	0.081	41	n/a	n/a	42
Hospitalization (general)	Primary	8	-0.033	0.043	0.659	-0.033	0.043	41	n/a	n/a	42
Hospitalization (psychiatric)	Primary	1	-0.067	4.281	0.987	-0.067	4.281	41	n/a	n/a	42
Emergency department visits	Primary	9	0.009	0.045	0.845	0.009	0.045	41	n/a	n/a	42
Blood pressure	Primary	2	-0.064	0.090	0.460	-0.064	0.090	41	n/a	n/a	42
Blood sugar	Primary	2	-0.057	0.091	0.530	-0.057	0.091	41	n/a	n/a	42
Death	Primary	2	-0.007	0.160	0.860	-0.007	0.160	41	n/a	n/a	42
Cholesterol	Primary	2	-0.054	0.090	0.550	-0.054	0.090	41	n/a	n/a	42
Primary care visits	Primary	7	0.289	0.172	0.092	0.289	0.172	41	n/a	n/a	42

Individual Placement and Support for individuals with serious mental illness
Literature review updated May 2014.

Program Description: These studies assess the Individual Placement and Support (IPS) model of supported employment compared with typical vocational services for individuals with serious mental illness. The IPS model focuses on competitive employment, client interests, rapid job placement and ongoing support by employment specialists. In contrast, the comparison groups typically received vocational services that focused on building job skills before employment placement.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Employment	Primary	5	0.358	0.283	0.206	0.358	0.283	40	n/a	n/a	41
Hospitalization (psychiatric)	Primary	2	-0.003	0.288	0.993	-0.003	0.288	40	n/a	n/a	41
Earnings	Primary	6	0.385	0.123	0.002	0.385	0.123	40	n/a	n/a	41
Competitive employment	Primary	13	1.075	0.105	0.001	1.075	0.105	40	n/a	n/a	41
Hours worked	Primary	4	0.303	0.196	0.121	0.303	0.196	40	n/a	n/a	41
Psychiatric symptoms	Primary	1	-0.136	0.164	0.404	-0.136	0.164	40	n/a	n/a	41

Peer support: Substitution of a peer specialist for a non-peer on the treatment team

Literature review updated May 2014.

Program Description: The programs examined in this analysis compared treatment teams with a peer specialist to treatment teams with a non-peer in a similar role. The treatment teams in this analysis provided services to individuals with severe mental illness, major depression, or individuals receiving VA services for a psychiatric diagnosis.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	2	0.256	0.221	0.246	0.256	0.221	44	n/a	n/a	45
Alcohol abuse or dependence	Primary	1	0.169	0.141	0.228	0.169	0.141	44	n/a	n/a	45
Employment	Primary	1	-0.080	0.141	0.569	-0.080	0.141	44	n/a	n/a	45
Hospitalization (psychiatric)	Primary	4	0.022	0.174	0.901	0.022	0.174	44	n/a	n/a	45
Homelessness	Primary	2	0.045	0.122	0.711	0.045	0.122	44	n/a	n/a	45
Emergency department visits	Primary	1	-0.471	0.244	0.053	-0.471	0.244	44	n/a	n/a	45
Psychiatric symptoms	Primary	6	0.050	0.131	0.701	0.050	0.131	44	n/a	n/a	45

Mobile crisis response

Literature review updated May 2014.

Program Description: Two types of mobile crisis interventions were included in this analysis: an interdisciplinary team who was dispatched after individuals called a mental health hotline and a 911 response team staffed by police and psychiatric nurses.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	-0.662	0.304	0.030	-0.662	0.304	36	n/a	n/a	37
Hospitalization (psychiatric)	Primary	2	-0.420	0.216	0.052	-0.420	0.216	36	n/a	n/a	37

Primary care in behavioral health settings (community-based settings)

Literature review updated May 2014.

Program Description: Behavioral health settings (mental health and substance abuse treatment centers) provide primary care for patients on site or nearby. This collection of studies was conducted at community-based treatment centers.

			Meta-Analysis of Program Effects								
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	1	0.116	0.194	0.548	0.116	0.194	41	n/a	n/a	42
Body mass index (BMI)	Primary	1	-0.002	0.194	0.992	-0.002	0.194	41	n/a	n/a	42
Hospitalization (general)	Primary	4	-0.058	0.150	0.701	-0.058	0.150	41	n/a	n/a	42
Emergency department visits	Primary	6	0.064	0.045	0.157	0.064	0.045	41	n/a	n/a	42
Blood pressure	Primary	2	-0.064	0.090	0.480	-0.064	0.090	41	n/a	n/a	42
Blood sugar	Primary	1	-0.015	0.198	0.940	-0.015	0.198	41	n/a	n/a	42
Cholesterol	Primary	1	-0.188	0.196	0.974	-0.188	0.196	41	n/a	n/a	42
Primary care visits	Primary	5	0.177	0.240	0.461	0.177	0.240	41	n/a	n/a	42

Peer support: Addition of a peer specialist to the treatment team

Literature review updated May 2014.

Program Description: The programs examined in this analysis compared treatment teams with a peer specialist to treatment teams without a peer specialist. The treatment teams in this analysis provided services to individuals with serious mental illness or individuals receiving VA services for a psychiatric diagnosis.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	0.000	0.243	1.000	0.000	0.243	46	n/a	n/a	47
Employment	Primary	1	0.386	0.133	0.004	0.386	0.133	46	n/a	n/a	47
Global functioning	Primary	1	0.685	0.135	0.001	0.685	0.135	46	n/a	n/a	47
Hospitalization (psychiatric)	Primary	7	-0.064	0.123	0.604	-0.064	0.123	46	n/a	n/a	47
Homelessness	Primary	1	-0.138	0.243	0.569	-0.138	0.243	46	n/a	n/a	47
Psychiatric symptoms	Primary	3	0.035	0.093	0.710	0.035	0.093	46	n/a	n/a	47

Illness Management and Recovery (IMR)

Literature review updated May 2014.

Program Description: Illness Management and Recovery (IMR) is a 40-hour curriculum for individuals with severe mental illness which addresses recovery strategies and information about serious mental illness. The evaluations in this analysis include data from programs where IMR was delivered to individuals and programs where IMR was delivered to a group.

Meta-Analysis of Program Effects										
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	0.027	0.246	0.914	0.027	0.246	48	n/a	n/a	49
Employment	Primary	2	0.010	0.262	0.969	0.010	0.262	48	n/a	n/a	49
Hospitalization (psychiatric)	Primary	3	-0.095	0.190	0.617	-0.095	0.190	48	n/a	n/a	49
Psychiatric symptoms	Primary	2	-0.517	0.404	0.200	-0.517	0.404	48	n/a	n/a	49
Suicidal ideation	Primary	2	-0.517	0.665	0.437	-0.517	0.665	48	n/a	n/a	49

Forensic Assertive Community Treatment

Literature review updated May 2014.

Program Description: Forensic Assertive Community Treatment (FACT) is an adaptation of Assertive Community Treatment (ACT) for individuals with involvement in the criminal justice system. In this analysis the study population included individuals with serious mental illness who were identified as candidates for FACT in jail.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	-0.111	0.173	0.524	-0.111	0.173	41	n/a	n/a	42
Hospitalization (psychiatric)	Primary	1	-0.210	0.174	0.226	-0.210	0.174	41	n/a	n/a	42

Supported housing for chronically homeless adults

Literature review updated May 2014.

Program Description: These programs provide permanent supportive housing to chronically homeless single adults. Most of the studies reviewed here used the Housing First model which provides independent apartments with no specific requirements for abstinence or treatment. Programs typically provide intensive case management and services. Housing is in independent apartments; participants hold the lease but receive subsidies to pay rent.

Supported housing is associated with significant reductions in homelessness which we are unable to monetize at this time. To test the sensitivity of our benefit-cost results to this known limitation of our model, we examined a recent comprehensive benefit-cost study of housing vouchers (Carlson et al., 2010). Our benefit-cost results would not change significantly if we had included the benefits of providing housing estimated by this study.

Carlson, D., Haveman, R, Kaplan, T., & Wolfe, B. (2010). The benefits and costs of the section 8 housing subsidy program: a framework and first-year estimates (Discussion Paper no. 1380-10). Madison, WI: University of Wisconsin-Madison, Institute for Research on Poverty.

Meta-Analysis of Program Effects											
Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	6	-0.103	0.058	0.078	-0.103	0.058	40	n/a	n/a	41
Alcohol abuse or dependence	Primary	2	-0.087	0.144	0.423	-0.087	0.144	40	n/a	n/a	41
Employment	Primary	2	0.161	0.201	0.424	0.161	0.201	40	n/a	n/a	41
Illicit drug abuse or dependence	Primary	1	0.073	0.180	0.684	0.073	0.180	40	n/a	n/a	41
Hospitalization (general)	Primary	5	-0.141	0.069	0.041	-0.141	0.069	40	n/a	n/a	41
Hospitalization (psychiatric)	Primary	4	-0.057	0.028	0.047	-0.057	0.028	40	n/a	n/a	41
Homelessness	Primary	8	-0.503	0.023	0.000	-0.503	0.023	40	n/a	n/a	41
Emergency department visits	Primary	3	-0.179	0.070	0.010	-0.179	0.070	40	n/a	n/a	41
Primary care visits	Primary	3	0.157	0.052	0.003	0.157	0.052	40	n/a	n/a	41

Assertive Community Treatment

Literature review updated May 2014.

Program Description: Assertive Community Treatment (ACT) is a treatment and case management approach that includes the following key elements: a multidisciplinary team that includes a medication prescriber, direct service provided by team members, caseloads that are shared between team members, services provided in locations convenient for the patient, and low patient-to-staff ratios. The studies reviewed in this analysis compared ACT to treatment as usual or other forms of case management. ACT is associated with significant reductions in homelessness, for which the current WSIPP benefit-cost model does not estimate monetary benefits. To test the sensitivity of our benefit-cost results to this known limitation, we examined a recent comprehensive benefit-cost study of housing vouchers (Carlson et al., 2011). Our benefit-cost results would not change significantly if we had included the benefits of providing housing estimated by this study.

Carlson, D., Haveman, R., Kaplan, T., & Wolfe, B. (2011). The benefits and costs of the Section 8 housing subsidy program: A framework and estimates of firstyear effects. Journal of Policy Analysis and Management, 30(2), 233-255.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	8	-0.042	0.070	0.546	-0.042	0.070	42	n/a	n/a	43
Alcohol abuse or dependence	Primary	4	0.097	0.127	0.446	0.097	0.127	42	n/a	n/a	43
Global functioning	Primary	5	0.142	0.096	0.139	0.142	0.096	42	n/a	n/a	43
Hospitalization (general)	Primary	4	-0.014	0.110	0.897	-0.014	0.110	42	n/a	n/a	43
Hospitalization (psychiatric)	Primary	22	-0.141	0.070	0.045	-0.141	0.070	42	0.000	0.118	43
Homelessness	Primary	8	-0.228	0.098	0.020	-0.228	0.098	42	n/a	n/a	43
Emergency department visits	Primary	3	-0.048	0.215	0.823	-0.048	0.215	42	n/a	n/a	43
Psychiatric symptoms	Primary	11	-0.050	0.061	0.496	-0.050	0.061	42	n/a	n/a	43

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Washington State Institute for Public Policy

The Washington State Legislature created the Washington State Insititute for Public Policy in 1983. A board of Directors-representing the legislature, the governor, and public universities-governs WSIPP and guides the development of all activities. WSIPP's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.